

Serial No. 10/706,270

REMARKS

In accordance with the foregoing, the abstract, specification, and claims 1-7, 10-12, and 15 are amended. No new matter is presented in any of the foregoing and, accordingly, approval and entry of the amended claims are respectfully requested.

In accordance with the foregoing, claims 1-7, 10-12, and 15 are have been amended without narrowing the claims within the meaning of *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 56 USPQ2d 1865 (Fed. Cir. 2000).

Claims 1-15 are pending and under consideration.

ITEM 4: OBJECTION TO SPECIFICATION - ABSTRACT

The Examiner objects to the abstract because of the term "means". (Action at page 3). The Abstract is amended herein and withdrawal of the objection to the abstract is requested.

ITEM 5: OBJECTION TO SPECIFICATION

The Examiner objects to the specification because of informalities.

The specification is amended herein to correct informalities as suggested by the Examiner and withdrawal of the objection to the specification is requested.

ITEM 6: OBJECTION TO CLAIMS 1-15

Claims 1-15 are objected to because following informalities. Claims 1-15 are amended herein as suggested by the Examiner and withdrawal of the objection to claims 1-15 is requested.

ITEMS 8-11: REJECTION OF CLAIMS 2, 7, AND 12 UNDER 35 U.S.C. 112, SECOND PARAGRAPH

Claims 2, 7 and 12 are rejected under 35 U.S.C. 112, second paragraph as being indefinite.

Claims 2, 7, and 12 are amended herein to replace "said cutting margin" with —any cutting margin—. Applicants submit that claims 2, 7, and 12, all as amended, comply with 35 U.S.C. 112, second paragraph and withdrawal of the rejection is requested.

ITEM 13: REJECTION OF CLAIMS 1-4, 6-9 AND 11-14 UNDER 35 U.S.C. 102(b) AS BEING ANTICIPATED BY MAEDA ET AL (U.S. PAT 5,796,618)

The Examiner rejects claims 1-4, 6-9 and 11-14 under 35 U.S.C. 102(b) as being anticipated by Maeda.

Independent claims 1, 6, and 11 recite a computer-aided manufacturing (CAM) system, a

Serial No. 10/706,270

computer-aided manufacturing (CAM) program embodied on a medium, and a method, using claim 1 as an example, including "a numerical control (NC) apparatus for machining a work, which is an object before machining, according to NC data; a cutting margin model generator that obtains (CAD) model that is solid model data of a metal mold to be made and a measured work geometric model that is geometric model data of said work, which is obtained by measuring said work to be machined, and generates a cutting margin model that is a difference between said measured work geometric model and said CAD model; and an NC data generator that generates NC data based on the generated cutting margin model."

As provided in MPEP §706.02 entitled Rejection on Prior Art, anticipation requires that the reference must teach every aspect of a claimed invention.

Applicants submit that Maeda does not support an anticipatory-type rejection by not teaching features recited in the present application's claims.

According to aspects of the present invention the "measured work geometric model" is "obtained by measuring said work to be machined". The work is "an object before machining". Since the measured work geometric model is handled, according to aspects of the present invention is understood by those skilled in the art that operations, for example, operations such as casting, forging, padding and the like can be achieved with improved accuracy.

Maeda merely teaches that a before-machining shape model creating unit 11 is included in a CAD apparatus 10. Therefore, in a system as taught by Maeda the before-machining shape model creating unit 11 generates the before-machining shape model as CAD data, and not obtained by measuring the work to be machined.

Therefore, a system as taught by Maeda cannot handle operations such as casting, forging, padding and the like having complicated shapes.

Further, features recited by dependent claims are not taught by Maeda. For example, dependent claims 3, 8, and 13 recite a CAM system, using claim 3 as an example, as set forth in claim 1, including a unit that measures a tool form in a state in which said tool is installed to said NC apparatus, and generates a tool model, and wherein said NC data generator generates said NC data based on both of said cutting margin model and said tool model.

The Examiner contends these feature is taught by Maeda citing FIGS. 32-45. However, Maeda illustrates a tool that is photographed and there is no teaching to measure a tool form in a state in which the tool is installed to the NC apparatus.

Further, Applicants submit that detecting a degree of wear of a tool, does not teach generating a

Serial No. 10/706,270

tool model. In Maeda, because the degree of wear of the tool is used, the actual tool form is not affected to the NC data.

According to aspects of the present invention, since the tool model is used to generate the NC data, the actual tool form can be reflected to the NC data.

As another example, dependent claim 4, 9, and 14, recite using claim 4 as an example, a unit that "outputs an instruction so as to move a tool in either of a tool axis direction and a Z-axis direction, to said NC apparatus, according to a tool load state informed from said NC apparatus."

Maeda does not teach to move a tool. Rather, Maeda merely teaches detecting the wear of the tool.

Summary

Since features recited by claims 1-4, 6-9 and 11-14a are not taught by the cited art, the rejection should be withdrawn and claims 1-4, 6-9 and 11-14a allowed.

ITEM 14: REJECTION OF 1-15 UNDER 35 U.S.C. 102(e) AS BEING ANTICIPATED BY RICHEY (U.S. PUB 2003/0033041)

Claims 1-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Richey (U.S. Pub 2003/0033041).

Independent claims 1, 6, and 11 recite a computer-aided manufacturing (CAM) system, a computer-aided manufacturing (CAM) program embodied on a medium, and a method, using claim 1 as an example, including "a numerical control (NC) apparatus for machining a work, which is an object before machining, according to NC data; a cutting margin model generator that obtains (CAD) model that is solid model data of a metal mold to be made and a measured work geometric model that is geometric model data of said work, which is obtained by measuring said work to be machined, and generates a cutting margin model that is a difference between said measured work geometric model and said CAD model; and an NC data generator that generates NC data based on the generated cutting margin model."

Applicants submit that Richey does not support an anticipatory-type rejection by not describing features recited in the present application's claims.

Richey merely teaches (see, for example, paragraphs [0048], [0059], as illustrated in FIG. 3B block 76, and Abstract) "a system for producing an assembly comprising at least one component", where a "work station processing element compares the as-built models to an electric display of three-dimensional authority models of components, and alters a position of at least one of the at least one actual model and the at least one actual model and the at least one authority model."

Serial No. 10/706,270

Since the "assembly" is handled in Richey, the position of at least one of the actual model and authority model is altered based on the comparison, and only the alteration of position is necessary. That is Richey teaches a comparison to alter position, not to generate NC data.

Rather, Richey teaches that a NC program for the components is generated (see, for example, paragraph [0051] as illustrated in Fig. 3A, block 60) in which the generation of the NC program is carried out before altering the position. Therefore, in Richey, there is no need to generate NC data based on a comparison. The actual model taught by Richey, which is used only to optimize the position, cannot be used to generate the recited "cutting margin model" and further does not correspond to "the measured work geometric model data."

Further, features recited by dependent claims are not taught by Richey. For example, dependent claims 4, 9, and 14, recite using claim 4 as an example, a unit that "outputs an instruction so as to move a tool in either of a tool axis direction and a Z-axis direction, to said NC apparatus, according to a tool load state informed from said NC apparatus." Richey does not teach to move a tool.

As another example, claim 5 recites "a unit that displays said measured work geometric model, which is colored based on load data in said monitoring data stored by said storing means."

Richey does not teach a measured work geometric model, which is colored "based on load data."

Summary

Since features recited by claims 1-15 are not taught by the cited art, the rejection should be withdrawn and claims 1-15 allowed.

ITEM 15: REJECTION OF CLAIMS 1-4, 6-9 AND 11-14 UNDER 35 U.S.C. 102(e) AS BEING ANTICIPATED BY MATSUMIYA ET AL (U.S. PAT 6,671,571)

The Examiner rejects claims 1-4, 6-9 and 11-14 under 35 U.S.C. 102(e) as being anticipated by Matsumiya (U.S. Pat 6,671,571).

Independent claims 1, 6, and 11 recite a computer-aided manufacturing (CAM) system, a computer-aided manufacturing (CAM) program embodied on a medium, and a method, using claim 1 as an example, including "a numerical control (NC) apparatus for machining a work, which is an object before machining, according to NC data; a cutting margin model generator that obtains (CAD) model that is solid model data of a metal mold to be made and a measured work geometric model that is geometric model data of said work, which is obtained by measuring said work to be machined, and generates a cutting margin model that is a difference between

Serial No. 10/706,270

said measured work geometric model and said CAD model; and an NC data generator that generates NC data based on the generated cutting margin model."

Applicants submit that Matsumiya does not support an anticipatory-type rejection by not describing features recited in the present application's claims.

Matsumiya merely teaches (see, for example, FIG. 10 a processing sequence labeled as "BLANK-[PROCESS]-[MEASUREMENT]-[PROCESS]-[MEASUREMENT]. That is, Matsumiya teaches that the feature indicated by the label "BLANK" is not measured.

Accordingly, Matsumiya does not teach the recited "measured work geometric model." Thus, Matsumiya cannot handle operations such as casting, forging, padding and the like, which make the shape of the work complicated.

Further, a cutting margin model and NC data generated based on the cutting margin model in are not taught by Matsumiya.

Matsumiya merely teaches that a [PROCESS] is carried out according to the result of [MEASUREMENT]. However, Matsumiya further teaches (see, for example, col. 9, lines 29-37), the comparison is to detect that any one of the results measured by the measuring machine 31 exceeds the tolerance limit or exists within the dangerous range, whereby the accuracy of the machining is confirmed.

Matsumiya does not teach that a cutting margin modal and NC data generated based on the cutting margin model are used to confirm the accuracy of the machining.

Further, features recited by dependent claims are not taught by Matsumiya. For example, dependent claims 4, 9, and 14, recite using claim 4 as an example, a unit that "outputs an instruction so as to move a tool in either of a tool axis direction and a Z-axis direction, to said NC apparatus, according to a tool load state informed from said NC apparatus." Matsumiya does not teach to move a tool "according to a tool load state."

As another example, claim 5 recites "a unit that displays said measured work geometric model, which is colored based on load data in said monitoring data stored by said storing means."

Matsumiya does not teach measured work geometric model which is colored based on "load data."

Summary

Since features recited by claims 1-4, 6-9 and 11-14 are not taught by the cited art, the rejection should be withdrawn and claims 1-4, 6-9 and 11-14 allowed..

Serial No. 10/706,270

CONCLUSION

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

Date: July 25, 2005

By: Paul W. Bobowiec
Paul W. Bobowiec
Registration No. 47,431

1201 New York Avenue, NW, Suite 700
Washington, D.C. 20005
Telephone: (202) 434-1500
Facsimile: (202) 434-1501

CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that this correspondence is being transmitted via facsimile to: Commissioner for Patents
P.O. Box 1450 Alexandria, VA 22313-1450
on 7/25, 2005

STAAS & HALSEY

By: Paul W. Bobowiec

Date 7/25/2005